NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

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NOAA National Weather Service and NextEra Energy work together to mitigate effects of wind turbines on weather radars during severe weather

Because windfarms can look like thunderstorms on weather radar, the NOAA National Weather Service Forecast Office in Hastings, Nebraska, and Cottonwood Wind Project, LLC, a special purpose entity of Next Era Energy Resources, recently signed a voluntary agreement to stop the wind turbines and eliminate interference during severe weather when requested by local forecasters.

NextEra Energy Resource's proposed project, consisting of up to 66 turbines, is to be located south of the town of Blue Hill in Webster County, Nebraska, and the nearby Doppler weather radar operated by the NWS in Hastings. Wind turbines will be as close as two and a half miles from the radar and cause some interference resulting in contaminated data.

Large utility-scale wind turbines, whose total height is typically up to 500 feet above the ground, can interfere with weather radars if they are in the radar's line of sight. The rotating blades of the wind turbine defeat the radar's clutter filtering mechanism, which is designed for stationary objects such as buildings and terrain. No known adequate wind turbine filtering technique is available at this time.

Returned signals from rotating wind turbines can look like rain showers or thunderstorms. The contaminated returned signal can also impact the radar's algorithms, especially precipitation estimates above the wind farm area.

The voluntary agreement provides a strategy for mitigating the wind turbines' effects. NextEra Energy Resources may cease or curtail operation of the wind turbines for 15 to 60 minutes at a time during an agreed upon curtailment season between March 21 and September 21 by request of forecasters from NWS Hastings. Reasons for curtailment include severe weather affecting the wind farm area and flash flooding caused by isolated, stationary thunderstorms.

Staff from the NWS Hastings Forecast Office will train full time Cottonwood Wind Project operators to be storm spotters, and will provide briefings to Cottonwood operators when severe weather is expected to impact the project. In addition, NWS Hastings and NextEra will continue to communicate and explore future options such as sharing weather data.

NWS Hastings began providing information about the potential radar data impacts and mitigation strategies to media, emergency managers and the public last fall. These efforts will continue prior to the start of the severe weather season this spring.

NOAA's National Weather Service has been working with wind energy developers across the country to create mutually acceptable strategies to mitigate these potential impacts to NOAA's weather radars.

Additional information about radar and wind energy impacts is available online at: http://www.roc.noaa.gov/WSR88D/WindFarm/GeneralPublic.aspx

The National Weather Service's Hastings Forecast Office located in Hastings, NE., is the primary source of weather data, forecasts and warnings for the people in 24 south central Nebraska counties and 6 north central Kansas counties. Join us on Facebook and Twitter. Working with partners, the National Weather Service is building a Weather-Ready Nation to support community resilience in the face of increasing vulnerability to extreme weather.

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